Device Modeling Report

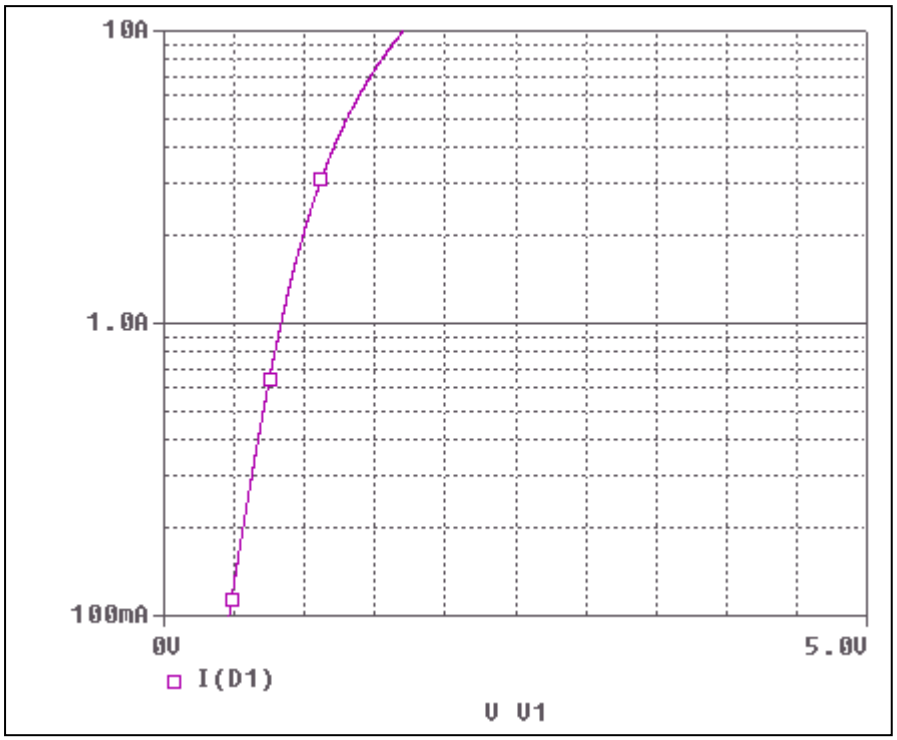
COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER / STANDARD
PART NUMBER: RHRP30120
MANUFACTURER: INTERSIL
REMARK: TC=25C

Bee Technologies Inc.

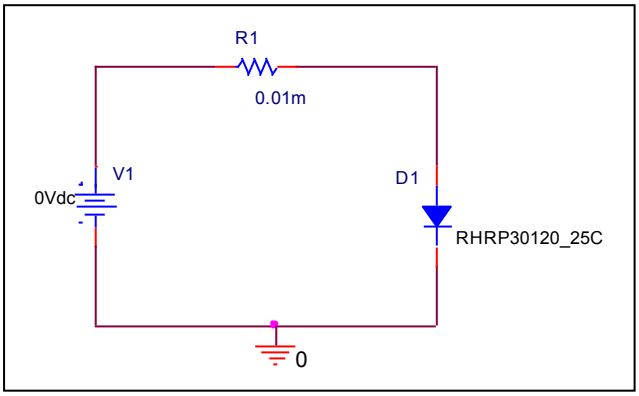
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a positive value)
IBV	Reverse Breakdown Current(a positive value)
TT	Transit Time
EG	Energy-band Gap

Forward Current Characteristic

Circuit Simulation Result

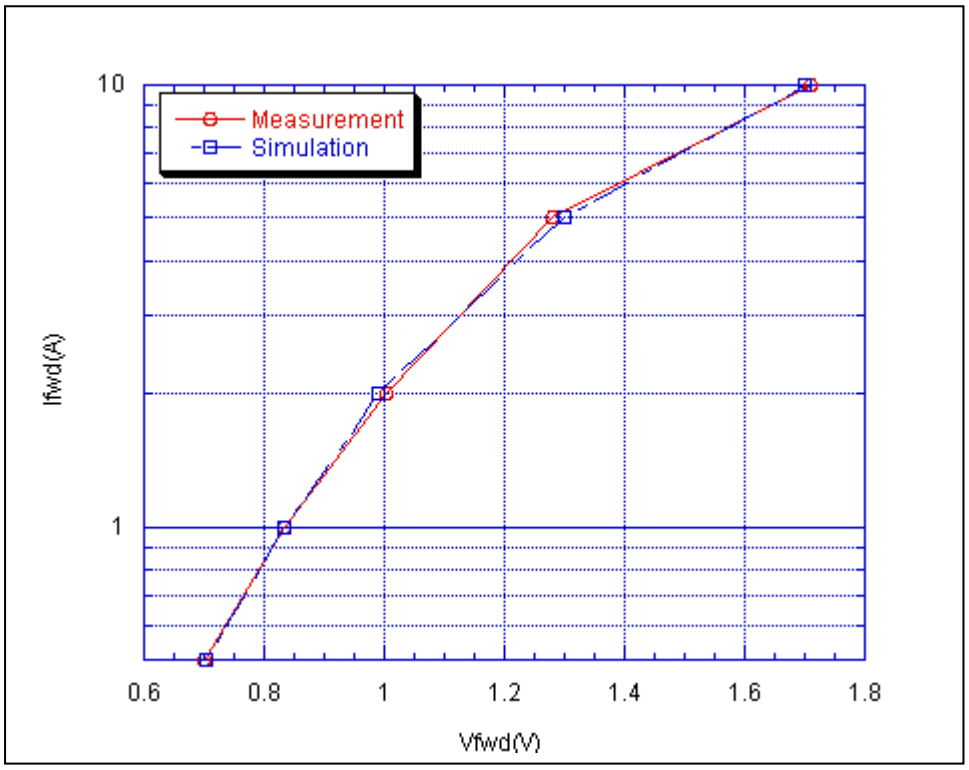


Evaluation Circuit



Comparison Graph

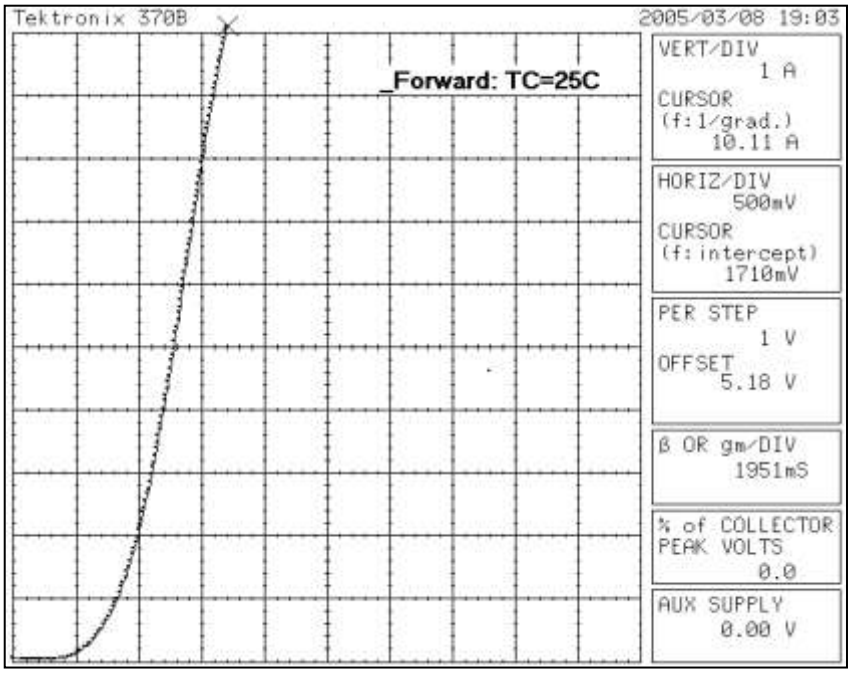
Circuit Simulation Result



Simulation Result

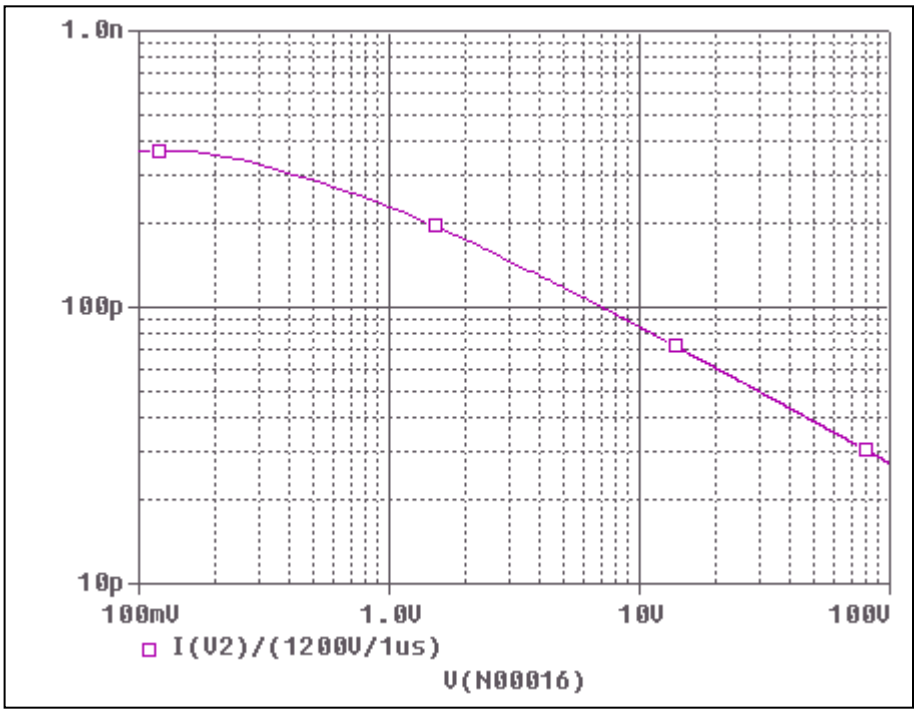
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.5	0.700	0.705	-0.70
1	0.835	0.833	0.30
2	1.005	0.989	1.61
5	1.280	1.300	-1.56
10	1.710	1.700	0.58

Forward Current Characteristic Reference

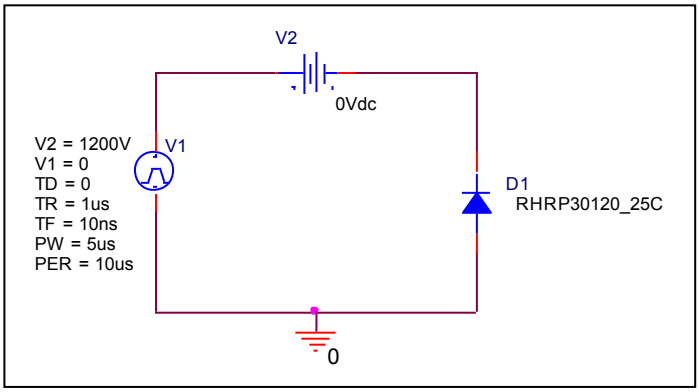


Capacitance Characteristic

Circuit Simulation Result

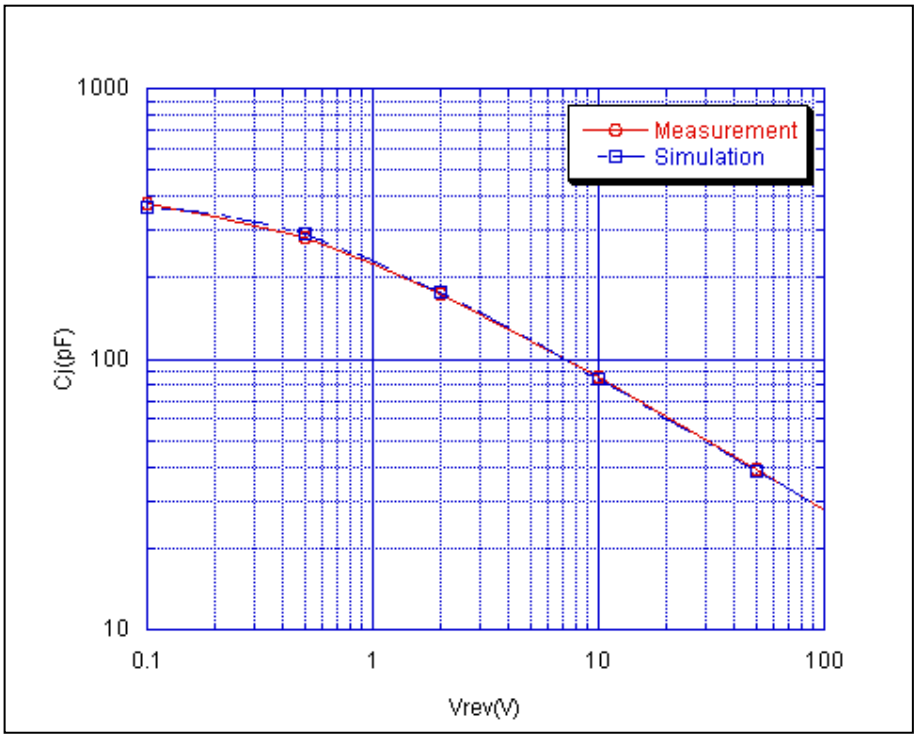


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

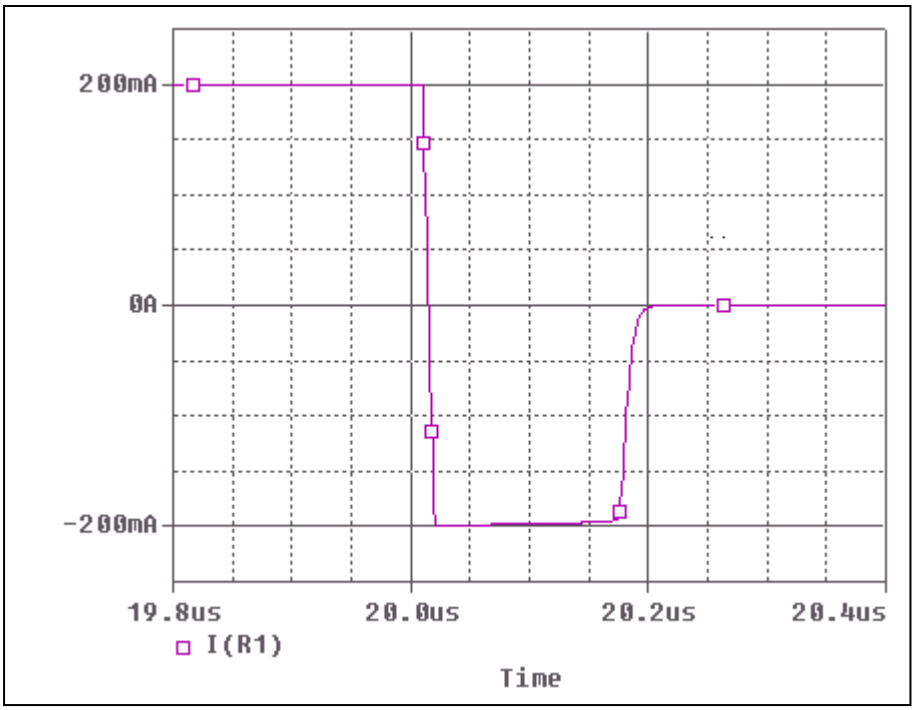


Simulation Result

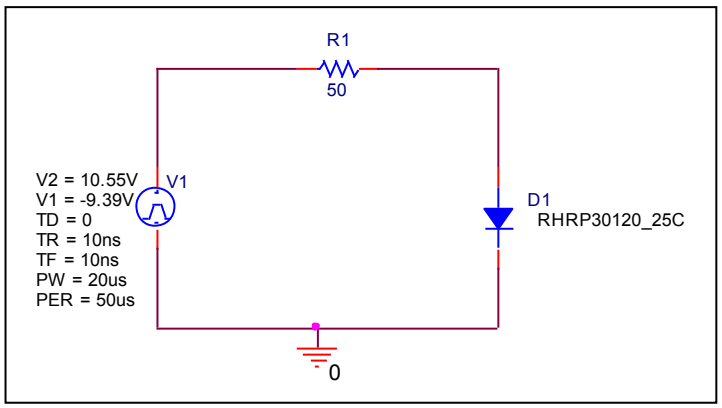
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	402.000	402.000	0.00
0.1	374.000	365.558	2.26
0.2	335.000	348.014	-3.88
0.5	283.000	289.232	-2.20
1	225.000	230.995	-2.66
2	174.000	176.364	-1.36
5	117.000	117.733	-0.63
10	86.000	84.912	1.27
20	61.000	60.578	0.69
50	39.000	38.511	1.25
100	27.500	27.302	0.72

Reverse Recovery Characteristic

Circuit Simulation Result



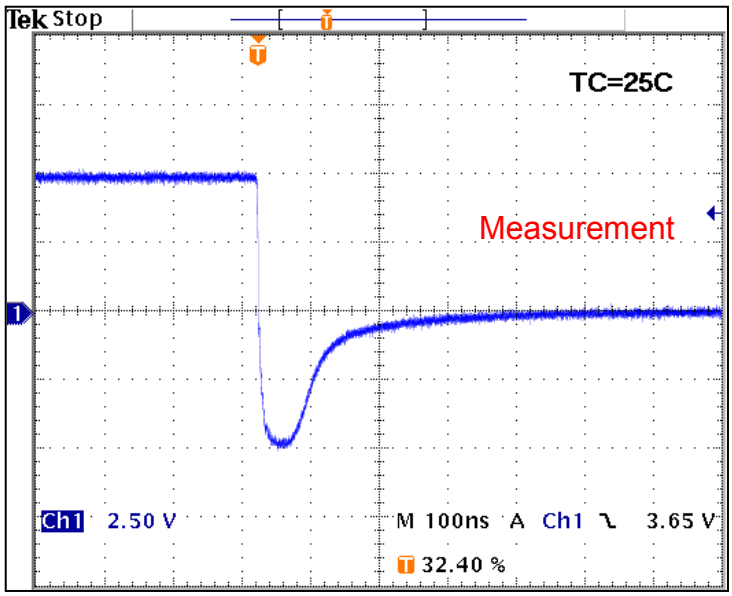
Evaluation Circuit



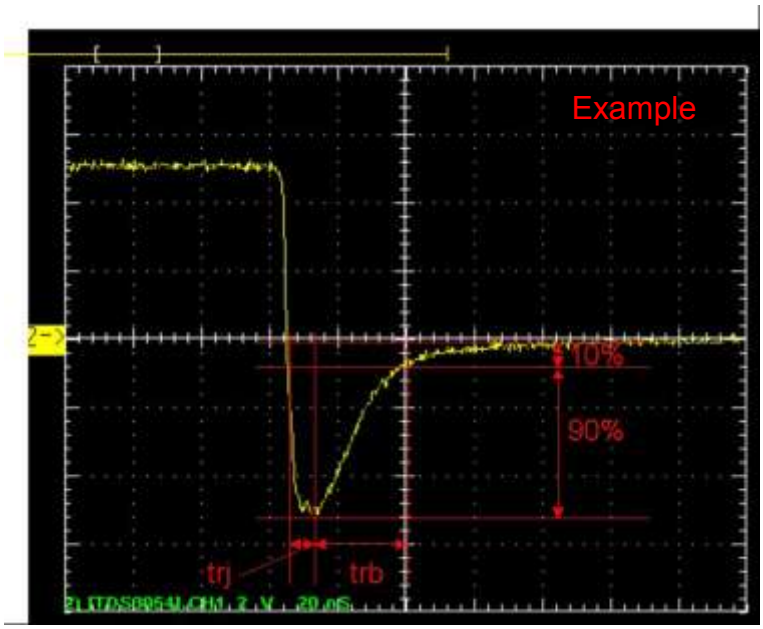
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trr	**174**	**ns**	**174.2**	**ns**	**0.1149**

Reverse Recovery Characteristic Reference



Trj =42 (ns)
Trb=132 (ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb